

**“A CONTINUATION OF POLICY BY OTHER MEANS:”
WORLD WAR I AS A VEHICLE FOR
TRANSFORMATION IN CANADIAN GOVERNANCE
AND MILITARY CAPABILITY**

A Monograph

by

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ABSTRACT

“A CONTINUATION OF POLICY BY OTHER MEANS:” WORLD WAR I AS A VEHICLE FOR TRANSFORMATION IN CANADIAN GOVERNANCE AND MILITARY CAPABILITY, by MAJOR Barbara J. Honig, Canadian Army, 45 pages.

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ACRONYMS

AAR	After Action Review
BEF	British Expeditionary Force
CBSO	Counter-Battery Staff Officer
CEF	Canadian Expeditionary Force
CIGS	Chief of the Imperial General Staff
C-in-C	Commander in Chief
CWRO	Canadian War Records Office
GOC	General Officer Commanding
IMB	Imperial Munitions Board
IWC	Imperial War Cabinet
IWO	Imperial War Office
NATO	North Atlantic Treaty Organization
OJT	On-the-job Training
OPCOM	Operational Command
OPCON	Operational Control
PM	Prime Minister
PPCLI	Princess Patricia's Canadian Light Infantry
SORA	Staff Officer Royal Artillery
TACON	Tactical Control
TEWT	Tactical Exercise without Troops
TTP	Tactics, Techniques, Procedures
UK	United Kingdom
U.S.	United States

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INTRODUCTION

Canada was a young nation in 1914. The British North America Act, forming the Dominion of Canada as a nation independent from Great Britain, but without the constitutional authority to make its own foreign policy, had passed less than half a century earlier, in 1867.¹ Provinces and territories had been formed and added to the confederation as recently as 1905.² Despite their independence, the Dominion of Canada remained closely bound to Great Britain. Eighty-nine percent of Canada's 7.2 million people in 1911 had been born in Canada, Britain, or a British colony – this census statistic is telling in that it does not even differentiate between Canadian-born and British-born, despite the 50-year interval since the British North America Act had established Canada's independence regarding internal government.³ Politically, "Canada's time as part of the British Empire inclined it to see strategic problems not in Canadian terms, but imperial and global terms."⁴ As Canadian Prime Minister (PM) Sir Wilfred Laurier stated in 1910 "when Britain is at war, Canada is at war... there is no distinction."⁵ Thus, when Britain's ultimatum to Germany expired on midnight 4 August 1914 and committed Britain to war, it also automatically committed Canada to war. In fact, "Prime Minister Robert Borden learned that

¹Library and Archives Canada, "Towards Confederation," Library and Archives Canada, <http://www.collectionscanada.gc.ca/confederation/023001-2700-e.html> (accessed 6 November 2013); G. W. L. Nicholson, *Official History of the Canadian Army in the First World War: Canadian Expeditionary Force 1914-1919* (Ottawa, Canada: Roger Duhamel, F.R.S.C., 1964), 5.

²Library and Archives Canada, "Towards Confederation: Provinces and Territories," Library and Archives Canada, <http://www.collectionscanada.gc.ca/confederation/023001-3000-e.html> (accessed 6 November 2013).

³Statistics Canada, "Canada Year Book 1914," Statistics Canada, http://www66.statcan.gc.ca/eng/acyb_c1914-eng.aspx?opt=%2feng%2f1914%2f191400190000_Statistical+Summary+of+the+Progress+of+Canada.pdf (accessed 6 November 2013).

⁴Michael S. Neiberg, "A Middle Power on the World Stage: Canadian Grand Strategy in the Twentieth Century," *Journal of Military and Strategic Studies* 14, no. 2 (2012): 6-7.

⁵Desmond Morton, *A Military History of Canada* (Edmonton, Canada: Hurtig Publishers, 1990), 130.

Canada was at war the same way millions of his countrymen did: he read about it in his morning newspaper.”⁶

Germany is more than 5000 km from Canada’s easternmost provinces: a distance impossible to cross with aircraft in 1914, and a lengthy sea journey through the stormy North Atlantic Ocean. Thus, it seems difficult to imagine that Germany posed an existential threat to Canada. However, the Canada of 1914 had decision-making authority for domestic affairs but not for foreign policy – an arrangement that made Canada more of a semi-autonomous province of Britain rather than an independent nation. As well, Canada was heavily dependent upon Britain for trade and naval defence at the time. During World War I, Canada maintained a home guard of 16,000 personnel, with an additional 50, 000 Canadian Expeditionary Force personnel in the country for training, awaiting deployment, or other miscellaneous duties.⁷ This miniscule force, even supplemented with whatever portions of the civilian population that could mobilize in the event of an invasion, would be unable to defend the nation against a German invasion subsequent to the fall of Britain and loss of British naval supremacy. This force would be similarly unable to defend Canada against aggression from its southern neighbor should the U.S. decide that the loss of British protection made Canada a reasonable target for invasion. Canada considered U.S. invasion a significant threat in the early 20th Century due to the vulnerability of Canada’s sparsely populated land mass and the U.S.’s previous aggression.⁸ Additionally, in the early years of the Great War the U.S. had not declared its intent to support the Allies, making it an unknown quantity and potentially worrisome neighbor. If Germany defeated Britain, Canada would be

⁶Neiberg, “A Middle Power,” 3.

⁷J. L. Granatstein, *Canada's Army: Waging War and Keeping the Peace* (Buffalo, NY: University of Toronto Press, 2002), 125.

⁸Stephen J. Harris, *Canadian Brass: The Making of a Professional Army 1860-1939* (Toronto, Canada: University of Toronto Press, 1988), 83-85.

without central government, without its head of state, without major economic partners, and without naval defence of its considerable coastlines. In short, an existential threat to Britain was an existential threat to Canada in 1914.⁹

Fifteen years earlier Canada had participated in its first expeditionary military operation – the Boer War of 1899. Britain’s expectation that Canada participate in the Boer War had exposed a deeply-rooted political division within Canada—the English speaking population were very much in support of Britain’s war; the French population were very much against it. Prime Minister Laurier had managed to contain the situation through careful political negotiation and by sending a voluntary force raised specifically for this war rather than sending permanent force or militia units.¹⁰ The unit returned home the following year with a nascent sense of national pride in being “Canadian” rather than simply British colonials.¹¹ And so in 1914, Prime Minister Borden led a nation divided and in transition: in addition to mounting a war effort against an existential threat to Britain and Canada, he needed to find a way to balance the French and English divisions within the country, and establish a national identity distinct from Great Britain.

Most certainly, the overriding goal in World War I was to defeat Germany and thus protect Britain, Canada, and the empire; however, Borden saw an opportunity to use the war as a “continuation of policy by other means” in another way.¹² Borden wanted to manage and implement Canada’s war effort in such a way that the contribution itself was a means to achieve

⁹Canada’s dependency upon collective defense is discussed in Erin Weir, “Using the Legacy of World War I to Evaluate Canadian Military Leadership in World War II,” *Journal of Military and Strategic Studies* 7, no. 1 (2004): 3.

¹⁰Morton, *A Military History*, 113-119.

¹¹*Ibid.*, 117.

¹²Carl von Clausewitz, Michael Eliot Howard, and Peter Paret, *On War* (Princeton, NJ: Princeton University Press, 2008), 87. According to Clausewitz, war is a way of achieving strategic objectives through the application of aggression and violence.

his strategic goal of establishing Canadian national identity and achieving autonomy from Britain on the world stage. The corollary to his plan was that the Canadian war effort had to be recognizably distinct from, and considered valuable by the British. This concept of “saliency” — the provision of some form of valuable specialist capability to coalition operations so that the nation has leverage in coalition decision-making, despite the relatively numerically small size of the contribution—would later become Canada’s defining military strategy during the Cold War.¹³ Borden’s saliency plan in 1914 was for the Canadian Expeditionary Force (CEF) to participate in the Great War as conspicuously Canadian formations operating under Canadian command and control.

Canada’s participation in World War I was a vehicle for transformation: the satellite state transformed into an ally, and the largely amateur Canadian Expeditionary Force (CEF) transformed into one of the most effective fighting formations in the British Expeditionary Force.¹⁴ Seen through the lens of operational art,¹⁵ these transformations are the result of arrangements of actions, linked in purpose, to achieve strategic objectives. The first of the strategic objectives was Canadian independence from Britain. The actions along the line of effort to achieve independence include the military and governance efforts to support the war, an information campaign to build a sense of nationalism, and Canadianization of the military force. The second strategic objective was the creation of an effective fighting force within the CEF. The actions along this line of effort revolved around the organizational culture of the Canadian Corps;

¹³Sean M. Maloney, “The Canadian Tao of Conflict,” in *Forging a Nation: Perspectives on the Canadian Military Experience*, edited by Bernd Horn (St Catherines, Canada: Vanwell, 2002), 280.

¹⁴Denis Winter, *Haig's Command: A Reassessment* (London: Viking, 1991), 6, 41, 131. Haig’s biographer identifies the Canadian Corps as one of the top two – if not the best – fighting forces in the British Expeditionary Force in 1918.

¹⁵Operational art is “the pursuit of strategic objectives, in whole or in part, through the arrangement of tactical actions in time, space, and purpose.” *ADP 3-0 Unified Land Operations*, ed. Headquarters, Department of the Army (Washington, DC: Department of the Army, 2011), 9.

development of a command philosophy that engendered professionalism and pragmatism, and the value placed upon learning and innovation.

National Level Transformation

Throughout the war, Canada and the Canadian government matured and became more distinctive. Canada's manufacturing industry started the war with a reputation for profiteering and poor quality, but was quickly brought under control by the Anglo-Canadian Imperial Munitions Board (IMB). The IMB increased industrial capacity and quality to the point where it employed 3.5% of the Canadian population and paid for two thirds of Canada's military expenditures.¹⁶ Canada also deepened its relationship with the United States (U.S.), initially encouraging it to join the war and then later conducting negotiations regarding joint training, joint industry, and joint defense, although "Washington remained forever confused about Canada's precise status and certainly the British Embassy was unlikely to admit that Canadians had a voice of their own."¹⁷ Canada's domestic politics matured over the course of the war, gradually reducing political cronyism and relying more on sober deliberation.¹⁸ The civil service transitioned away from patronage appointments and towards meritocracy, and evolved a culture of methodical problem solving and innovation.¹⁹ Elected representatives in Parliament grappled with the grim realities of war, making controversial and difficult realpolitik decisions regarding taxation, implementing controls on industry, granting women the right to vote (1917-1918),²⁰ and enacting legislation for a military service draft which they knew would "split the country along linguistic and ethnic

¹⁶Morton, *A Military History*, 133-135.

¹⁷*Ibid.*, 146, 162.

¹⁸*Ibid.*, 158.

¹⁹*Ibid.*, 158.

²⁰*Ibid.*, 155.

lines” but was necessary to continue the war effort.²¹

The relationship between Canada and Britain evolved slowly, but Borden’s government persevered—after all, if Canada was fielding half a million men and loaning Britain hundreds of millions of dollars in funds and goods, they deserved a say in how the war was run.²² It took several years of efforts to change the way the British War Cabinet made decisions; finally, on 2 March 1917 the Imperial War Cabinet (IWC) met for the first time—including the participation of Dominion governments.²³ It did not fully resolve the situation; for example, the Passchendaele offensive in late 1917 occurred without the government of Canada’s knowledge and against the recommendations of the General Officer Commanding (GOC) the 1st Canadian Corps. Borden subsequently informed the British PM Lloyd George that if another Passchendaele occurred (i.e. a campaign or operation without his knowledge and against the recommendation of his ranking senior officer in France), that Canada would stop reinforcing the war effort—a serious threat and a sign of Canada’s increasing self-assurance.²⁴ By the end of the war, Canada felt sufficiently powerful to openly oppose Britain’s attempts to acquire territorial gains as part of the Armistice agreement.²⁵

The Canadian War Records Office (CWRO), conceived in a haphazard but fortuitous act of patronage, turned out to be a powerful tool for information operations in the creation of a

²¹Terry Copp, “The 2008 Ross Ellis Memorial Lecture in Military and Strategic Studies: Canada’s National Army, Canada’s National Interest 1918,” *Journal of Military and Strategic Studies* 10, no. 3 (2008): 20.

²²Morton, *A Military History*, 146. The financial support to Britain is discussed in Keith Neilson, “Canada and British War Finance,” in *Forging a Nation: Perspectives on the Canadian Military experience*, ed. Bernd Horn (St Catherines, Canada: Vanwell, 2002), 111-119.

²³Morton, *A Military History*, 151.

²⁴*Ibid.*, 162.

²⁵Copp, “Canada’s National Interest 1918,” 15.

Canadian national identity. They constructed an image of Canadian soldiers as “natural soldiers who through their northern heritage and innate abilities as hunters and backwoodsmen had qualities that, when combined with their adventurous, colonial mindsets and their pioneer disdain for discipline, produced brilliant battlefield performances.”²⁶ In addition to building and reinforcing the reputation of the Canadian Corps during the Great War, after the war the CWRO assisted the government of Canada in executing an act of unprecedented autonomy. When Canada was unhappy with the way the Imperial War Office (IWO) was writing Canada’s part in the official history of the Great War, Canada—having already secured its own war archives—published its own *Official History of The Canadian Forces in the Great War 1914-1919*.²⁷ The CWRO’s effectiveness in promulgating this image through Canada, Britain, and amongst the armies on the battlefield during and after the war contributed immensely to building a distinct national image of Canada and Canadians.²⁸

The most powerful tool in Canada’s efforts to establish Canadian identity and autonomy was the CEF itself. Early in the war, Borden committed to providing half a million military personnel; by the end of the war in fact 619,000 Canadians had served overseas²⁹—a significant undertaking by a nation with 7.2 million people, of whom 3.8 million people were male,³⁰ and perhaps 1.5 million were of military service age.³¹ About a third of those Canadians served in the

²⁶Tim Cook, “Documenting War and Forging Reputations: Sir Max Aitken and the Canadian War Records Office in the First World War,” *War in History* 10, no. 3 (2003): 267.

²⁷*Ibid.*, 274.

²⁸*Ibid.*, 265.

²⁹Canadian War Museum, “Canada and the First World War,” Canadian Museum of Civilization Corporation, <http://www.warmuseum.ca/cwm/exhibitions/guerre/canada-at-war-e.aspx> (accessed 6 November 2013).

³⁰Statistics Canada, “Canada Year Book 1914.”

³¹Morton, *A Military History*, 135.

1st Canadian Corps; the remainder served in the Canadian Cavalry Brigade, the Royal Navy, Royal Canadian Navy, Royal Air Force, Royal Canadian Air Force, Canadian Forestry Corps, British or Allied medical facilities, railway troops, and other military units.³² This significant contribution in blood and treasure earned Canada not only a voice amongst the international community,³³ but forged its own identity and sense of autonomy.³⁴ In the words of Desmond Morton, a preeminent Canadian historian:

Nations, claimed the French philosopher, Ernest Renan, are built from the experience of doing great things together. For Canadians, Vimy Ridge [a battle in which the 1st Canadian Corps earned its first notable success] was a nation-building experience. For some, then and later, it symbolized the fact that the Great War was also Canada's war of independence.³⁵

The CEF at the Beginning of World War I

The CEF entered World War I in the fall of 1914 as an ill-prepared, predominantly amateur, and inexperienced force. At the beginning of the war, there were 3,110 personnel in Canada's permanent force and 77,000 in the militia.³⁶ The CEF formed in fits and starts as militia battalions – both existing and newly formed – were recruited, trained, equipped, and deployed to England. The permanent force deployed some of its personnel in three battalions; some remained behind to form the framework for training in Canada, and the remainder were scattered through

³²Ibid., 150.

³³Copp, "Canada's National Interest 1918," 20; Neiberg, "A Middle Power," 9.

³⁴Copp, "Canada's National Interest 1918," 6; John R. Grodzinski, "The Use and Abuse of Battle: Vimy Ridge and the Great War Over the History of the First World War," *Canadian Military Journal* 10, no. 1 (2009): 85; Morton, *A Military History*, 145.

³⁵Morton, *A Military History*, 145.

³⁶Nicholson, *Official History*, 7, 12.

the CEF to spread out their expertise.³⁷ The 1st Canadian Division deployed in October of 1914. The more professional battalions of this contingent, consisting primarily of British reservists who lived in Canada, supplemented British Expeditionary Force divisions fighting in France. The remainder waited in England and conducted significantly more training, until February 1915 when the 1st Canadian Division assembled and subsequently fought its first engagement in April at the Second Battle of Ypres. The 2nd Canadian Division arrived in September of 1915 and joined with the 1st Canadian Division to form the 1st Canadian Corps, which fought its first corps-level action in April 1916. The 3rd and 4th Canadian Divisions arrived in Europe and joined the 1st Canadian Corps later in 1916. Throughout the remainder of the war, additional units deployed to England and then onwards to France as they enlisted and completed their training.³⁸

The early contingents of the CEF were poorly trained as individual soldiers and had conducted little or no collective training.³⁹ The majority of the CEF had been recruited privately by individual militia regiments into militia battalions; there was little standardization between the units and almost no command and control structure capable of operating at a level higher than battalion. Most officers had little leadership or technical training; in the entire first contingent, there were only 125 officers who had attended militia staff training and 12 who had attended

³⁷Nicholson, *Official History*, 22-24; Douglas E. Delaney, "Mentoring the Canadian Corps: Imperial Officers and the Canadian Expeditionary Force, 1914–1918," *The Journal of Military History* 77, no. 3 (2013): 937-938.

³⁸ Morton, *A Military History*, 135-143.

³⁹ Alex Haynes, "The Development of Infantry Doctrine in the Canadian Expeditionary Force: 1914-1918," *Canadian Military Journal* Autumn (2007): 63; Delaney, "Mentoring the Canadian Corps," 938.

permanent force staff training at the British Army Staff College in Camberly.⁴⁰ Promotions and appointments were largely based upon cronyism and political patronage.⁴¹

Cronyism, patronage, and profiteering also propelled the equipping of the CEF. The first waves arrived in England with poor quality boots, rifles, and entrenching tools, which despite objections of the CEF had been forced upon them by the Minister of the Department of Militia and Defence, Sam Hughes; primarily because friends of his manufactured those items.⁴²

The Canadian military's issues were recognized prior to the war: Sir Frederick Borden, Minister of the Department of Militia and Defence from 1896 to 1911, had undertaken numerous reforms to the militia aimed at reducing cronyism and patronage, and professionalizing the force. He limited the length of time a person could command a militia regiment; secured funding to improve equipment and training infrastructure; and grew the combat service support arms (intelligence, medical, signals, supply), which had been ignored by the predominantly infantry and cavalry militia.⁴³ He also went about reducing British dominance of the Canadian military by ending the practice of Canadian officers being automatically subordinate to British officers.⁴⁴ Despite his desire to reduce British influence, he did make a series of agreements with the British Army in 1907 and 1909 that ensured the two forces retained commonality of doctrine and staff duties. This would later greatly contribute to the CEF's ability to integrate into the British

⁴⁰ Nicholson, *Official History*, 10; A. M. J. Hyatt, *General Sir Arthur Currie: A Military Biography* (Toronto, Canada: University of Toronto Press, 1987), 14; Delaney, "Mentoring the Canadian Corps," 935.

⁴¹Hyatt, *Currie*, 3-4; Haynes, "Development of Infantry Doctrine," 64; Harris, *Canadian Brass*, 115-120.

⁴²Morton, *A Military History*, 133-137.

⁴³Morton, *A Military History*, 111-120; Carman Miller, *A Knight in Politics: A Biography of Sir Frederick Borden* (Montreal, Canada: McGill-Queen's University Press, 2010), 226-231, 259-263.

⁴⁴Morton, *A Military History*, 120.

Expeditionary Force (BEF) and the BEF's ability to mentor commanders and staff in the CEF.⁴⁵ When it became clear in the first decade of the twentieth century that war in Europe was likely, Sir Frederick had the Militia General Staff draw up detailed plans for mobilization of the Canadian militia.⁴⁶ In 1911 when the government of Canada changed from Liberal to Conservative-led, the newly elected PM Robert Laird Borden appointed a seemingly worthy successor to his cousin Sir Frederick as Minister of Militia and Defence – Sam Hughes.⁴⁷ Sam Hughes had been a long-serving Member of Parliament, was a colonel in the militia, and had served in the Canadian contingent during the Boer War; on paper, he was the perfect man for the job. Hughes was energetic, charming, outspoken, and worked tirelessly in support of his militia. He was also, however, egotistical, contemptuous of the permanent force, and believed himself above the law and not subject to discipline or censure from anyone.⁴⁸ Hughes had already demonstrated these personality traits during the Boer War, where he was returned home by his British Army superiors for insubordination and lack of cooperation. Rather than being subdued upon his return home, he bragged publically and frequently that he should have received two Victoria Crosses for his enormously heroic activities in South Africa.⁴⁹

Hughes' erratic behavior, egotism, cronyism, and disdain for professional army officers caused enormous problems for the Canadian army as it prepared for World War I. He refused to use the mobilization plans that had been carefully prepared over the decade leading up to the war, and instead sent personal telegrams to his militia cronies and told them to go ahead and recruit as

⁴⁵Delaney, "Mentoring the Canadian Corps," 937-939.

⁴⁶Morton, *A Military History*, 111-120.

⁴⁷Tim Cook, "The Madman and the Butcher: Sir Sam Hughes, Sir Arthur Currie, and their War of Reputations," *Canadian Historical Review* 85, no. 4 (12, 2004): 695.

⁴⁸Morton, *A Military History*, 127-131.

⁴⁹Cook, "The Madman and the Butcher," 694.

they liked. Hughes rejected the idea of relying upon professional staff officers to assist him, and instead tried to control all aspects of mobilization, training, equipping, staffing, and deployment himself; unsurprisingly it suffered from chaos, inefficiency, and ineffectiveness. Appointments and promotions for the staff and commanders of the CEF remained the personal prerogative of Hughes, as did selection of equipment and suppliers.⁵⁰ His CEF infrastructure in England suffered such a confused chain of command that they were unable to effectively support the CEF in France and was considered an enormous frustration to the British Army and an embarrassment to Canada.⁵¹ Hughes even tried to control field command of the army himself: PM Borden himself had to personally forbid this.⁵²

Hughes' erratic behavior, ineffective administration of the CEF, failure to cooperate with numerous Canadian and British officials, and refusal to follow orders finally caused PM Borden to fire him in the fall of 1916—two years after the war started. It took years to undo the damage Hughes did at the beginning of the war. The CEF had to be issued with British boots, rifles, and other equipment until Hughes' removal in 1916 opened the way for the CEF to purchase adequate equipment of their own.⁵³ The IMB, established in 1915 to take control of the war-related industries that were running wild with profiteering, cronyism, and poor quality control under the protection of Hughes, finally achieved high standards of quality control and contract distribution

⁵⁰Morton, *A Military History*, 131, 133; Hyatt, *Currie*, 3-4, 19; Cook, "The Madman and the Butcher," 695-696.

⁵¹Cook, "The Madman and the Butcher," 697; Hyatt, *Currie*, 61; Desmond Morton, *A Peculiar Kind of Politics: Canada's Overseas Ministry in the First World War* (Buffalo, NY: University of Toronto Press, 1982), chapters 3-5.

⁵²Cook, "The Madman and the Butcher," 695.

⁵³Hyatt, *Currie*, 17-51; Nicholson, *Official History*, 27; Cook, "The Madman and the Butcher," 698-699.

in 1917.⁵⁴ The Ministry of Defence resolved its span of control challenges in 1916 by bifurcating into two separate, co-equal ministries. The Ministry of Defence remained responsible for all military matters in Canada, while the new Ministry of the Overseas Military Forces of Canada assumed control of all CEF elements fighting in Europe, as well as the support infrastructure and organizations located in Britain.⁵⁵

CANADIANIZATION OF THE 1ST CANADIAN CORPS

In keeping with Borden's desire to use Canada's contribution to the war as a way of building national identity and independence, he insisted upon a policy of "Canadianization" for the 1st Canadian Corps. Although many elements of the CEF were absorbed into BEF formations, Borden intended to have the Canadian Corps be a tangible symbol of growing Canadian nationhood, seen by Canadians, the British government, and the international community as the embodiment of Canadian national identity and autonomy. Moreover, having a standing formed corps—operating under Canadian authority and being a de facto national army—gave him political leverage with the British government in a way that having a similar number of soldiers spread piecemeal through the BEF would not. Canadianization of the 1st Canadian Corps consisted of two main parts; keeping the corps together as a de facto national army, and working towards the entire corps being comprised of Canadians (including all staff and commanders). A third, less evident factor contributed to Canadianization: the establishment of the Ministry of the Overseas Military Forces of Canada and the associated reform of the CEF establishment in England.

⁵⁴Cook, "The Madman and the Butcher," 696-697; Morton, *A Military History*, 133.

⁵⁵Morton, *A Military History*, 147; Cook, "The Madman and the Butcher," 697.

National Army – Keeping the Canadian Corps Together

When the first Canadian contingent arrived in the United Kingdom in the autumn of 1914, the British Army intended on using the Canadians as a manpower replacement pool to bring British Army formations up to strength. They assumed they had a command relationship over the Canadians similar to the contemporary Operational Command (OPCOM) relationship in Canadian and NATO doctrine, or Operational Control (OPCON) in U.S. Army doctrine.⁵⁶ This was a reasonably logical plan, given the ill preparedness of the Canadian units and the imperial mindset that Canada was simply a colonial appendage of Britain—after all, her soldiers enrolled as “imperials under Britain’s Army Act” and her officers “carried temporary British commissions.”⁵⁷ The Dominion of Canada, however, wanted its soldiers to remain together as a national army so that the government of Canada could leverage its war contributions directly to build a sense of nationalism and independence within Canada as well as in the minds of the British. Canada insisted upon a command relationship more along the lines of the modern Canadian and NATO OPCON, where the British Army could assign missions, but could not break up the Canadian formation.⁵⁸ Pressure to break up formations continued—and was steadfastly resisted—throughout the war, primarily because the Commander-in-Chief of the BEF,

⁵⁶Canadian and NATO doctrine differs from U.S. doctrine regarding command relationships. The Canadian and NATO OPCOM is analogous to the U.S. OPCON in that it confers the authority to task organize and break up formations/units. The Canadian and NATO OPCON command relationship does *not* permit the commander to do this. See pages 2-16 and 2-17 of *ADRP 5-0 The Operations Process* for the U.S. definition of OPCON. See page 5-4 of *CFJP 01 Canadian Military Doctrine* for definition of the Canadian command relationships.

⁵⁷Morton, *A Military History*, 145.

⁵⁸Morton, *A Military History* 146; Morton, *Peculiar Kind of Politics*, 7. Canadian and NATO OPCON gives a commander authority to assign missions to a formation or unit, but not to break up or task organize it. The U.S. Tactical Control (TACON) is not quite analogous to this as it restricts the gaining commander to “the detailed direction and control of movements or maneuvers within the operational area necessary to accomplish missions or tasks assigned [by the parent unit].” See pages 2-16 and 2-17 of *ADRP 5-0 The Operations Process* for the U.S. definition of TACON, including this quote. See page 5-4 of *CFJP 01 Canadian Military Doctrine* for definition of the Canadian OPCON command relationship.

Field Marshall Sir Douglas Haig, simply could not conceive of treating a Dominion force as an independent ally rather than as simply another group of British.⁵⁹ Finally, in early 1918 the Earl of Derby, the British Secretary for War, ordered Haig to stop trying to break up the Canadian Corps, telling him “we must look upon them in the light in which they wish to be looked upon rather than the light in which we would wish to do so.”⁶⁰

There were exceptions to Canadianization, generally in the realm of specialty occupations. The CEF could not hope to run front line hospitals with its own resources, so Canadian doctors, nurses, and medical staff were absorbed into the British medical system. The Canadian Forestry Corps and railway troops were similarly assigned to British specialty formations. The Princess Patricia’s Canadian Light Infantry (PPCLI), comprised primarily of British reservists living in Canada, was sufficiently professional upon its arrival in England in 1914 that it went directly into combat with a British division in France while the remainder of the 1st Canadian Division trained in England.⁶¹ That was a temporary assignment; the PPCLI rejoined the 1st Canadian Division in February 1915 when the division deployed to France to fight. Throughout the war, there would be British, French, and other Allied battalions and brigades that would serve under the Canadian Corps for short periods of time and specific missions, and Canadian formations in turn would serve under British divisions and corps for short periods of time and specific missions. Mostly, however, the Canadian Corps served as a formed unit with all its sub-formations organic to the corps.

A consequence of the policy of keeping the Corps together was the development of a cohesive team and tremendously efficient working relationship amongst the corps. Because

⁵⁹Douglas Haig, G. D. Sheffield and J. M. Bourne, *Douglas Haig: War Diaries and Letters, 1914-1918* (London: Weidenfeld & Nicolson, 2005), 405, 432; Granatstein, *Canada's Army*, 132.

⁶⁰Morton, *A Military History*, 161.

⁶¹*Ibid.*, 137.

formations and personnel worked together in the same corps month after month, year after year, they grew to know each other extremely well. They knew each other's strengths and weaknesses, built trust between levels of command, understood the language used in passage of information, and developed thorough understandings of their senior officers' intentions and methods. Currie stated it most eloquently when soliciting assistance to pressure Haig to give him back the two Canadian divisions that had been temporarily reassigned to reinforce a flanking British corps under heavy assault during the Ludendorff Offensive of 1918:

From the very nature and constitution of the organization it is impossible for the same liaison to exist in a British Corps as exists in the Canadian Corps. My staff and myself cannot do as well with a British Division in this battle as we can do with the Canadian Divisions, nor can any other Corps Staff do as well with the Canadian Divisions as my own. I know that necessity knows no law and that the Chief [Haig] will do what he thinks best, yet for the sake of the victory we must win, get us together as soon as you can.⁶²

Building Capacity in the Canadian Corps

Having established the Canadian Corps as a de facto national army, the next problem was to ensure it was staffed and led by trained and qualified personnel. This was a significant problem, given that in 1914 the CEF had only 137 trained staff officers and no officers who had commanded in the field at higher than a battalion level.⁶³ The need for expertise for corps- and division-level command and control trumped the desire to man the corps entirely with Canadians, but political pressure remained intense throughout the war to continually replace British officers with Canadian ones as soon as there were suitably trained and experienced Canadian officers available.⁶⁴ In total, 214 British Army officers—including seven of the corps'

⁶²Hyatt, *Currie*, 104; Currie to General Sir H.A. Lawrence, 27 March 1918, in Sir Arthur Currie and Mark Osborne Humphries, *The Selected Papers of Sir Arthur Currie: Diaries, Letters, and Report to the Ministry, 1917-1933* (Waterloo, Canada: Wilfrid Laurier University Press, 2008), 91.

⁶³Nicholson, *Official History*, 10; Hyatt, *Currie*, 14; Delaney, "Mentoring the Canadian Corps," 935.

⁶⁴Delaney, "Mentoring the Canadian Corps," 931; Nicholson, *Official History*, 39-40.

forty-one general officers—served with the 1st Canadian Corps over the course of the war in various key staff and command positions, although it is somewhat difficult to draw conclusions from that number alone as 79 of those 214 remained with the CEF for less than two months. A better comparison is to look at the numbers of British officers with the CEF during two snapshots in time, as proposed by Douglas Delaney in *Mentoring the Canadian Corps: Imperial Officers and the Canadian Expeditionary Force, 1914–1918*. In April 1917, when the 1st Canadian Corps achieved its victory at the Battle of Vimy Ridge, there were 41 British Army officers amongst the key staff and commanders of the corps: Major General Louis Lipsett in command of the 3rd Division, the remainder in staff positions. Eighteen months later at the end of the war, there were only five British officers amongst the key staff positions of the Canadian Corps, and none in command.⁶⁵

The evolution of how the CEF made command appointments demonstrates both a gradual Canadianization of the process as well as a professionalization of the organization. Initially, the BEF proposed candidates for command of the Canadian formations, although PM Borden and Minister of Defense Hughes (subsequently replaced by the Minister of the Overseas Military Forces of Canada upon Sam Hughes' removal in 1916) held authority for final approval. Hughes maintained control of battalion and brigade appointments until he was forced from office in 1916; he was less interested in staffs and so left those selections to the division commanders. Hughes' removal allowed progress towards professionalizing, and the transition was cemented in 1917 with General Sir Arthur Currie's appointment as commander of the 1st Canadian Corps. Although the BEF still proposed division commanders, and the PM and minister had approval authority,

⁶⁵Patrick H. Brennan, "Byng's and Currie's Commanders: A Still Untold Story of the Canadian Corps," *Canadian Military History* 11, no. 2 (2002): 6; Delaney, "Mentoring the Canadian Corps," 933-935, 945-946. One of the brigade commanders, Brigadier-General R.J.F. Hayter, was technically a British officer; however, he was Canadian-born, had attended the Royal Military College of Canada, and had served with the 1st Canadian Corps since 1915, making him sufficiently Canadian to be ignored from the British numbers.

now Currie's concurrence was also required – finally giving the CEF some say over its commanders. Once Currie assumed control of promotions and appointments, he steadfastly refused to bow to political pressure to appoint specific officers and even refused the PM's request to appoint Hughes' inexperienced and poorly performing son as a division commander. Instead, Currie instituted a meritocracy that rewarded commanders who conserved soldiers' lives and sought constantly to improve the quality of their units.⁶⁶ Although a proponent of Canadianization of the Canadian Corps, Currie was a strict advocate of capability over all other factors. He did not differentiate between permanent force and militia officers, nor would he permit Canadianization at the expense of effectiveness. If no Canadian was suitable for a position, Currie was content to have a British officer fill the position.⁶⁷

The first commander of the 1st Canadian Division, and subsequently first commander of the 1st Canadian Corps when it stood up in late 1915, was an experienced British officer, Major General Edwin Alderson. Canadian political leadership found him to be an acceptable candidate because he had served in Canada as a subaltern and had commanded two battalions of Canadians as a brigade commander during the Second Boer War (1900-1902).⁶⁸ Proposing Alderson to command the CEF's first division and subsequently the 1st Canadian Corps was representative of the pattern set by the British throughout the war regarding their personnel support to the CEF. Despite their frustrations with the Canadians' initial un-preparedness and on-going obstinacy in refusing to submit fully to British command, the BEF was careful to select talented and suitable officers to serve with the Canadians. They emphasized competence, ability to work with others, personality which lent itself to mentoring, and if possible some sort of Canadian connection:

⁶⁶Delaney, "Mentoring the Canadian Corps," 940; Hyatt, *Currie*, 52, 86; Brennan, "Byng's and Currie's Commanders," 5.

⁶⁷Hyatt, *Currie*, 52, 70-71.

⁶⁸Delaney, "Mentoring the Canadian Corps," 938.

being born in Canada, having served in Canada, or having served with Canadians in South Africa.⁶⁹ There was friction, of course, but generally the arrangement worked extremely well.⁷⁰ The high caliber of British officers serving with the 1st Canadian Corps is evident in the later achievements of some of those officers. Alderson's successor, Lieutenant-General the Honorable Sir Julian Byng, was promoted out of 1st Canadian Corps command to command Third Army;⁷¹ three of the British officers rose to be appointed as Chief of the Imperial General Staff; and half a dozen others reached various ranks of general.⁷²

Initially, there was not much of a mentoring system in place; any teaching or mentoring done by experienced British officers serving in the Canadian Corps was coincidental and locally instigated rather than part of an overarching plan. In 1916, two separate situations converged and caused the implementation of a formal training and mentoring system. The British Army was recognizing that casualties had depleted their pool of trained staff officers such that they could not man their existing positions; much less man their planned expansion to 60 divisions. On the Canadian side, Hughes' removal had permitted a saner and more practical approach to working with the British Army; Ottawa and the Overseas Ministry asked the IWO to assist them in training staff officers so they could work towards Canadianizing the corps. Haig subsequently commenced a joint British-Dominion staff officer training program to increase expertise and interoperability between the forces. The first step was a slightly more formalized on-the-job (OJT) training system where junior officers were assigned to an experienced British staff to learn how they operated. This was better than nothing, but there was still significant variability in the quality and experience of mentorship. A temporary staff colleges established at Hesdin, France,

⁶⁹Ibid., 949-951.

⁷⁰Ibid., 951.

⁷¹Morton, *A Military History*, 149.

⁷²Delaney, "Mentoring the Canadian Corps," 949-950.

ran a series of staff courses, including a senior-level course that focused on the staff duties appropriate to colonels and generals, and a junior staff course that focused on staff duties at a field grade level. However, Hesdin and Cambridge were unable to provide sufficient throughput to produce all the necessary staff officers for the BEF and dominion forces. Thus, the IWO re-instituted the OJT program, making it slightly more formal with designated training requirements that the supervisors/mentors must provide.⁷³

An example of the effectiveness of the more formalized OJT program can be found in the experiences of Major Alan Brooke, a British officer assigned to the 1st Canadian Corps as the Staff Officer Royal Artillery (SORA) and responsible for planning in support of the Commander of the Corps Artillery. Despite his respect for the Commander, Brigadier-General E.W.B. Morrison (a militia officer), Brooke found that the commander was so unfamiliar with the technical aspects of artillery that he was unable to participate in planning. Thus Brooke happily found himself with almost unlimited scope of authority for planning Corps Artillery support, but unable to effectively communicate the technical aspects of artillery planning and use with his commander.⁷⁴ A year later, under the formalized OJT system, that same Major Brooke acted as mentor to the young Canadian Major Harry Crerar, who later took over Brooke's job as the corps SORA. The high quality of mentor and staff learner and the corresponding significant emphasis placed by both the CEF and the BEF on the program is evident in this particular pairing: in World War II, Brooke went on to be the Chief of the Imperial General Staff (1941 to 1942) while Crerar went on to command the 1st Canadian Army (1944).⁷⁵

⁷³Ibid., 935-936, 941-944.

⁷⁴Viscount Alanbrooke, "Notes on my life," 59, 5/2/13, Papers of Field Marshal Viscount Alanbrooke (Alanbrooke Papers), Liddell Hart Centre for Military Archives (LHCMA), King's College, London. Quoted in Delaney, "Mentoring the Canadian Corps," 931-932.

⁷⁵Delaney, "Mentoring the Canadian Corps," 931-932, 936.

Between loaning talented, capable staff officers and commanders to the CEF and providing mentoring and staff training opportunities, the BEF contributed enormously to the professionalization of the 1st Canadian Corps. It was not so much their knowledge of tactics and doctrine; all armies were struggling equally at the time to solve the problem of how to break the trench warfare stalemate. The true strength of the BEF's support to the CEF was that it formed a strong backbone in staff duties—administration, management, and technical expertise—that supported the fledgling CEF as it grew experience and expertise of its own. It permitted the CEF to fight from a stable platform, learn quickly from experts, and perhaps avoid many of the catastrophes associated with learning while in contact with the enemy.

The Overseas Ministry

The final crucial piece of the Canadianization of the 1st Canadian Corps actually occurred outside the corps, in Britain. The CEF organization set up in Britain to act as staging base, supply hub, training ground, convalescence facility, and rear area command and control hub was a shambles. In keeping with Hughes' erratic, haphazard planning methods and his desire to retain control over all facets of the CEF, there were no less than nine separate commanders or civilian authority figures in Britain in March 1916 who all were – or thought they were – in charge of significant portions of the CEF installations and activities there. Colonel J.C. MacDougall was designated "General Officer Commanding," but without clear authority. Colonel J.W. Carson was to represent the CEF in all matters regarding supply and depots, and was under the impression that he was not subject to MacDougall's authority, but rather reported directly to Hughes on all matters. The training camps at Bramshott, Tidiworth, and Shorncliffe had their own commanders. Brigadier-General J.E.B. Seely commanded the Canadian Cavalry Brigade, and newly arrived divisions from Canada were under the command of their GOC while transiting through the United Kingdom. None of these appointments held authority or jurisdiction over any of the others.

Additionally, Sir George Perley, the Canadian High Commissioner to Britain, reported to Borden regularly and was accountable to the British for CEF activities. Sir Max Aitken, head of the CWRO, reported to Hughes, who encouraged him to implicate himself into CEF affairs in Britain. There was no overall commander, no clear determination of authorities and responsibilities or chains of command, and no way of managing disputes between them – other than approaching Hughes personally for every detail.⁷⁶

Unsurprisingly, the situation was unacceptable to everyone involved. The CEF in France was frustrated because the Britain-based organizations were unable to effectively manage supply, reinforcements, and strategic links to the Government of Canada—all of which caused the 1st Canadian Corps to suffer. The IWO was frustrated because the confused chains of command made the CEF difficult to work with; they could never be sure they were speaking with a person who had the authority to resolve any given issue and they could never be certain that another organization within the CEF would not simply do something different anyways. Borden was frustrated because the situation was degrading Canada's ability to translate his strategic goals into tactical actions, and because it was negatively affecting Canada's reputation with the British. Hughes was frustrated because some of the key leadership in the United Kingdom persisted in reporting to Borden rather than to himself, and he felt that Borden was interfering in what he saw was his own bailiwick. Furthermore, Hughes was under constant pressure from Borden to resolve the issue, which he found difficult given his confused and self-focused interpretation of military hierarchy. Perley was horrified because the situation was embarrassing for Canada, and it made his job more difficult as a junior partner trying to build credibility when the most visible part of

⁷⁶Nicholson, *Official History*, 202-203.

the enterprise was a laughingstock.⁷⁷ No doubt the key leadership involved in the disputes were frustrated because they spent significant time and effort in territorial and jurisdictional disputes rather than concentrating on whatever their responsibilities should have been.

Ultimately, Hughes' refusal—or inability—to reform the byzantine and ineffective CEF organizations in Britain was the final straw for Borden's tolerance of his Minister.⁷⁸ In November 1916, Borden forced Hughes' resignation and stood up a Ministry of Overseas Military Forces of Canada, appointing Perley as the Minister. Perley removed many of the leadership personnel involved in the previous acrimonious disputes and appointed Major-General R.E.W. Turner, then commander of the 2nd Canadian Division, to the newly created position of Commander for the Canadian Forces in Britain.⁷⁹ Turner, Perley, and their newly arrived team went about resolving the issues in the United Kingdom and were successful in building an effective organization. As evidence of the new ministry's effectiveness, the literature ceased to discuss problems in this organization or the support they provided to the CEF in Europe after 1916.⁸⁰

The Overseas Ministry characterized the further professionalization and maturity of the CEF and the government of Canada's implementation of foreign policy. The following year, Perley and his successor, Albert Edward Kemp, were able to extend their reach by establishing a Canadian Section in France, which permitted the Ministry to extend Canada's control and authority through Haig's headquarters and into the 1st Canadian Corps itself.⁸¹ Although it may

⁷⁷Nicholson, *Official History*, 205-209; Hyatt, *Currie*, 61; Morton, *Peculiar Kind of Politics*, 64-72, 75-76; Morton, *A Military History*, 147; Cook, "The Madman and the Butcher," 697.

⁷⁸Nicholson, *Official History*, 208-211.

⁷⁹*Ibid.*, 211-212.

⁸⁰Morton discusses a few of the actions Perley and Turner took in *A Military History of Canada*, 148, but with this exception, none of the other references in the bibliography mention any issues after 1916.

⁸¹Morton, *A Military History*, 161.

not sound like a positive circumstance for the corps to be subject to more direct governmental oversight from yet another source, it was in fact beneficial in a number of ways. The Ministry was able to back up Currie and give him political top-cover when he balked at complying with some of the British directives, which he felt were not in Canada's best interests.⁸² As well, the Canadian Section provided a more direct and effective link between the government of Canada's strategic goals and the 1st Canadian Corps' tactical actions. It also provided a physical statement of Canada's political autonomy and policy divergence from Britain, and boosted the nationalistic Canadian sentiment of the soldiers of the CEF.⁸³

ORGANIZATIONAL CULTURE

Canadianization of the 1st Canadian Corps gave the organization two enormous advantages. Firstly, having all elements of the corps remain together throughout the war alleviated the need to go continually through the process of getting to know each other as new formations joined the organization, along with the accompanying conflict to establish roles and rules for interaction and group norms.⁸⁴ British corps constantly cycled through this process as divisions rotated through, thus reducing the time in which any given British corps was a cohesive team performing at full capacity. The Canadian Corps, on the other hand, did not suffer the constant rotation of new divisions was able to build cohesion, trust, mutual understanding, and efficient working relationships amongst the elements and personnel of the corps, thus leaving more time and energy for performing as a cohesive team. Arguably, this allowed significantly more time and effort available for innovation and emerging new ideas.

⁸²Ibid., 161.

⁸³Ibid., 148.

⁸⁴Bryan Lawson, *How Designers Think: The Design Process Demystified* (Oxford, UK: Elsevier/Architectural, 2006), 246. Groups go through a process which is colloquially called "forming, storming, and norming" prior to performing well as a team.

Secondly, the provision of talented, capable staff officers to the CEF and the provision of mentoring and staff training opportunities gave the 1st Canadian Corps a strong staffing backbone and permitted it to develop its own talent without compromising its effectiveness. However, if Canadianization provided the stable platform from which the CEF could fight and learn, it could not, on its own, explain the transformation in capability that occurred during the Great War. The remainder of the explanation comes from looking at the changes that occurred within the organizational culture of the Canadian Corps.⁸⁵ The 1st Canadian Corps contributed to its own transformation by evolving their organizational culture to one that prized professionalism, pragmatism, merit, learning, and innovation. This evolution can be examined by considering the professionalization of leadership within the Canadian Corps as well as the value placed upon learning and innovation.

Professionalization of Leadership

The transition in command philosophy within the Canadian Corps echoed in its implementation of meritocracy to facilitate the evolution towards professionalism. Appointment into command positions within the CEF at the start of the war had largely been a political affair.⁸⁶ Hughes' idea of ensuring his officers shared "his values and approach to soldiering" meant he systematically excluded most regular force officers and Liberals, as well as making no effort to choose personnel who were actually qualified for their rank or position.⁸⁷ Patronage was a long-standing tradition within the militia, and its officers did not necessarily find it abnormal prior to

⁸⁵Culture is "the shared beliefs, attitudes, values, goals, and practices that characterize the larger institution over time. It is deeply rooted in long-held beliefs and customs." *ADRP 6-22 Army Leadership*, ed. Headquarters, Department of the Army (Washington, DC: Department of the Army, 2012), 7-1 – 7-2.

⁸⁶Hyatt, *Currie*, 3-4; Haynes, "Development of Infantry Doctrine," 64; Harris, *Canadian Brass*, 100.

⁸⁷John Marteinson, *We Stand on Guard: An Illustrated History of the Canadian Army* (Montreal, Canada: Ovale Publication, 1992), 99.

the war. However, the war created a tension that pitted the comfortable status quo against the pressing need to professionalize the CEF. The patronage system became unpopular even amongst those who had benefitted from it to achieve their current position, which was essentially every officer in command of a battalion or higher, since Hughes had personally appointed all of them.⁸⁸ The ministerial change in 1916 brought with it a cultural change, and meritocracy quickly replaced patronage within the CEF.⁸⁹ Newly appointed Overseas Minister Perley strongly supported this initiative and promised PM Borden in November of 1916 that under his Ministry the practice of favoritism over merit for promotions would cease. He kept his word and subsequently through the next few years blocked all political pressure brought to bear on the CEF to promote or appoint specific personnel.⁹⁰ His political top cover permitted the GOC 1st Canadian Corps, Lieutenant General Sir Julian Byng, to institute a number of training schemes to help professionalize the senior officers of the corps.⁹¹

Currie, who succeeded Byng as GOC 1st Canadian Corps, was a pragmatic, innovative, and conscientious commander of great moral courage; and he valued those same traits in his officers. He was a strict advocate of capability over all other factors; he did not differentiate between permanent force and militia officers, and if no Canadian was suitable for a position, he was content to have a British officer fill the position.⁹² The overarching theme that Currie instilled in the leadership culture of the corps was that leaders who were not careful about

⁸⁸Weir, "Using the Legacy," 3-4.

⁸⁹Brennan, "Byng's and Currie's Commanders," 5.

⁹⁰Harris, *Canadian Brass*, 119, 125-126.

⁹¹Brennan, "Byng's and Currie's Commanders," 5.

⁹²Hyatt, *Currie*, 52, 70-71; Currie to Charles Swayne, 23 January 1918, in Currie and Humphries, *Selected Papers*, 73.

conserving the lives of their soldiers would be removed from command.⁹³ There was no mathematical formula for determining the extent to which a leader conserved the lives of his soldiers, but rather a pervasive expectation that leaders must do everything in their power to prepare their soldiers, set the conditions for success, and make sound decisions in the execution of their duties. Lord Mottistone, commander of the Canadian Cavalry Brigade, wrote that Currie “had an almost fanatical hatred of unnecessary casualties. Of all the men that I knew in nearly four years on the Western Front, I think Currie was the man who took the most care of the lives of his troops.”⁹⁴

Officers who failed to meet expectations were removed from command; Byng removed four generals from command between May 1916 and May 1917, and Currie subsequently removed another twelve between May 1917 and the end of the war. Considering that forty-eight generals served in the 1st Canadian Corps between May 1916 and the end of the war, this is a removal rate of approximately thirty-three percent; an indication of how seriously the corps took meritocracy in the business of war.⁹⁵ Even more telling is that prominent political appointees, including Hughes’ brother and son, were amongst those generals removed from command. At the other end of the officer spectrum, from 1917 onwards new junior officers were commissioned almost entirely from the non-commissioned ranks of the CEF rather than brought in as replacement pool from Canada. This ensured that junior officers had the battle experience

⁹³Hyatt, *Currie*, 86.

⁹⁴The Right Honourable J.E.B. Seely, *Adventure* (London, 1930), 226. Quoted in Hyatt, *Currie*, 66.

⁹⁵Brennan, “Byng's and Currie's Commanders,” 7.

necessary to lead their veteran troops without subjecting them to the dangerous learning curve that all newly arrived personnel passed through.⁹⁶

As time went on, leaders who demonstrated pragmatism, innovation, diligence, and conscientiousness were selected for promotions and appointments, consequently reinforcing those characteristics and values as the climate within the corps. Not only did this assist the transformation of the Canadian Corps into a more effective fighting force, but it also affected the expectations the corps had of the BEF leadership under which it operated. As the BEF prepared for the upcoming Battle of Passchendaele (October 1917), Currie flatly refused to comply with Haig's plan to attach the 1st Canadian Corps under General Sir Hubert Gough's Fifth Army. The corps had fought with the Fifth Army the previous year at the Somme, and Currie felt that the Fifth Army staff's incompetence had made the battle more difficult than necessary and was responsible for unreasonably high casualty rates within the corps. A refusal like this was risky; only Currie's status as a national army commander, and the political top-cover provided by the Overseas Ministry permitted him to make this demand without being removed from command; and even then his security was by no means assured. The fact that he was willing to take a stand and risk his own removal illustrates the type of moral courage he established in the command climate of the Canadian Corps.

Haig, of course, was furious about Currie's intransigence, but eventually he agreed to the suggestion made by his Chief of Staff, Launcelot Kiggell: the 1st Canadian Corps would serve under General Sir Hubert Plumer's Second Army at Passchendaele instead.⁹⁷ The contrast between Currie's expectations of his subordinates and Haig's in this situation is striking: one of

⁹⁶Harris, *Canadian Brass*, 128. It is interesting to note that none of the references discuss the impact on the NCO corps of commissioning their most talented personnel into the officer corps.

⁹⁷Cook, "The Madman and the Butcher," 702; Granatstein, *Canada's Army*, 123; Haig, Sheffield and Bourne, *War Diaries and Letters*, 333.

Haig's finest fighting corps and well respected GOCs refused to serve under a particular army commander – accusing the Fifth Army of incompetence – and Haig's diary entry indicates that he is only vaguely aware that there was some sort of problem. He was completely unconcerned with determining the facts of the situation, much less requiring competence of his personnel.⁹⁸

Learning and Innovation

If nothing else, it can be said that the Canadian Expeditionary Force was flexible in its development because the principle players involved were learning as they went.

— David W. Love, *A Call to Arms*

A learning organization is “a place where people are continually discovering how they create their reality [and] how they can change it.”⁹⁹ It requires unity of effort, unity of purpose, and a shared understanding; the members of the team must align to function as a whole. Learning, innovation, and critical thinking must occur and be valued at all levels.¹⁰⁰

The CEF in 1914 was not a learning organization. Many of the militia officers, including both those with prior service and those newly enrolled for the war, deployed without even achieving the mandated training standard for their rank. “In the combat arms alone, 204 of 1114 officers lacked the appropriate qualification, and another 186 were offered promotion above their level of training, some by as many as three grades.”¹⁰¹ Creative thinking and organizational learning would have been extremely difficult for the first contingent as they struggled through the chaotic mobilization and deployment to England and were hampered by the pool of raw personnel

⁹⁸Haig, Sheffield and Bourne, *War Diaries and Letters*, 333.

⁹⁹Peter M. Senge, *The Fifth Discipline: The Art and Practice of the Learning Organization* (New York: Doubleday/Currency, 2006), 12.

¹⁰⁰*Ibid.*, 217-221.

¹⁰¹Harris, *Canadian Brass*, 100.

who had very little military experience to draw upon.¹⁰² The permanent force members had been influenced by the prevailing British pre-war culture of anti-intellectualism amongst the officers; study, questioning, and improvement were not valued. Whereas promotions and appointments were tied to political patronage amongst the militia officers, amongst the permanent force officers seniority was the overriding promotion factor.¹⁰³ Creative thinking and learning were not valued, nor was effectiveness taken into account.

When the CEF began fighting in France in 1915, there was most certainly learning at the tactical level, but still not an organizational learning culture. For example, the PPCLI had been fighting with a British division since December 1914 and were reassigned a year later to the newly formed 3rd Canadian Division when it stood up in December 1915. Obviously at this point they were experienced fighters and accustomed to trench warfare, but “there is no evidence whatsoever that their Brigade and Divisional commanders (or their respective staffs) recognized this fact by insisting they share their hard-won experience in helping train their sister battalions in the brigade or division ... Instead, the other infantry battalions would have to learn by trial and error.”¹⁰⁴

In mid-1916, General Sir Julian Byng, the new GOC 1st Canadian Corps, began an “institutionalization and standardization of learning” within the corps.¹⁰⁵ Initially it focused specifically on senior officers, through “organized meetings of division, brigade and battalion

¹⁰²M. Laxton’s 1969 study of child education found that “the ability to initiate or express ideas ... is dependent on having a reservoir of knowledge from which to draw these ideas.” Lawson, *How Designers Think*, 156-157.

¹⁰³Winter, *Haig's Command*, 133.

¹⁰⁴Ian Macpherson McCulloch, “‘A Bonny Fighter and a Born Leader:’ A Portrait of Sir Archibald Cameron Macdonell, KCB, CMG, DSO,” in *Great War Commands: Historical Perspectives on Canadian Army Leadership, 1914-1918*, ed. Andrew B. Godefroy (Kingston, Canada: Canadian Defence Academy Press, 2010), 58.

¹⁰⁵Brennan, “Byng's and Currie's Commanders,” 5.

commanders and other officers where the hard-earned lessons of the Somme and new tactical ideas were frankly discussed.”¹⁰⁶ Currie was an enthusiastic participant in the learning culture, both under Byng’s command and later as the corps commander. In 1916 at the Battle of the Somme, the Canadian Corps had taken abnormally heavy casualties and required repeated attempts over a two-month period to seize the Regina Trench (a large, heavily reinforced, fiercely defended part of the German defenses at the Somme). Currie participated in the official BEF investigation of the action, but was unhappy with the shallow analysis given to the problem; essentially the official findings were simply that Allied forces should use more artillery. With Byng’s blessing, Currie continued his own investigation of the action at Regina Trench with the intent of determining specifically which tactics and procedures worked and which did not.

Currie’s final analysis showed an understanding of the modern battlefield consistent with present-day systems thinking, the idea that a system is more than just the aggregate of its many individual parts. In a system, the interactions or interrelations between the parts cause emergent properties that are not predictable simply by looking at each of the parts in isolation, and “cause and effect may be separated in time and space.” The larger the number of parts and interactions, the more complex a system is. Systems thinking also considers a system in the context of the larger environment, and understands that it is both affected by and has an effect on that environment.¹⁰⁷

Currie understood that no one thing was responsible for the difficulties at Regina Trench, but rather there were numerous small contributors. He found that the lack of rehearsals at battalion and company level meant soldiers did not actually know when they were moving, what

¹⁰⁶Ibid., 11.

¹⁰⁷Senge, *The Fifth Discipline*, 11-12; Jamshid Gharajedaghi, *Systems Thinking: Managing Chaos and Complexity: A Platform for Designing Business Architecture* (Amsterdam, Netherlands: Elsevier, 2006), 16, 49, 108-118; Dietrich Dörner, *The Logic of Failure: Why Things Go Wrong and What We Can Do to Make Them Right* (New York: Metropolitan Books, 1996), 38.

routes they were to take, or what their objectives were. The soldiers were able to get into and temporarily clear enemy trenches but could not hold them because they were short on manpower and ammunition, and close to culmination by that point in the battle. Reinforcements and resupplies were slow to move forward because they would only move through “safe” communication trenches, and those trenches could only be dug forward under the cover of darkness. The BEF had set the pattern of attacking at dawn; thus not only were the Germans expecting the attacks, but troops had to wait some 15 hours until darkness fell before they could expect any sort of resupply or reinforcement on the battlefield. Currie recommended that the corps institute rehearsals right down to platoon level so that soldiers knew when and where they were supposed to go. He also suggested the Canadian Corps attack at noon instead of dawn; this way night would be falling around the time when soldiers were in need of resupply and reinforcement in order to hold captured trenches.¹⁰⁸

In 1917 Currie participated in a BEF staff ride to Verdun to investigate what lessons could be learned from the French Army. His observations and recommendations for the Canadian Corps spanned the range of tactics, techniques, and procedures right up to operational art. His recommendations included, but were not limited to the following: rehearsals on terrain models, distribution of aerial photography and maps throughout the corps even down to section level, and adding heavy weapons to infantry platoons so they could manoeuvre and fight independently on the battlefield. The Canadian Corps immediately adopted the French method of choosing geographical features to be objectives, rather than continuing the British practice of objectives being map references or trenches.¹⁰⁹ The practical benefits of geographical features are immediately obvious: if a soldier can unequivocally identify and see where he is trying to get to

¹⁰⁸Granatstein, *Canada's Army*, 110; Hyatt, *Currie*, 60-61.

¹⁰⁹Granatstein, *Canada's Army*, 110.

on the battlefield, the chances of him getting there are much higher. The 2nd Canadian Division had experienced this exact problem at the Battle of St Eloi Craters in March and April 1916, where the objectives were specific craters – which could not be identified on a map, could not be physically seen during the handover from the departing British unit, and were indistinguishable in the mud and confusion of the battle. It had taken the division an embarrassing ten days to realize they had in fact seized the wrong craters and jeopardized the Second Army defensive line across the sector.¹¹⁰ Currie's time at Verdun also led the Canadians to abandon the rigid British system of standardized waves of attacks (where the leading wave had to seize and destroy everything and continue until they culminated). Instead, they adopted the French method of planning the waves specifically for the terrain and defensive works of a particular situation to arrange integrated firepower and infantry movement and avoid culmination. "The French infantry used rifle grenades and machine guns to keep the enemy in their trenches, so that the infantry could rush strong points." The leading wave of troops maintained momentum and focused on consolidating the captured objective, and follow-on waves dealt with remaining enemy positions/pockets of soldiers left in their wake. If the attack had to continue past the consolidated position, a follow-on wave of troops (which were less tired than the exhausted first wave) would then become the lead wave for the new attack.¹¹¹

Some of Currie's recommendations were simply the identification of a problem that still required a solution. For example, Currie recognized that "attacks were much more likely to succeed if fresh troops were employed," but existing SOP in both the French Army and BEF was to have the attacking forces march to the front trench lines immediately before the attack.¹¹² The

¹¹⁰Ibid., 86-87.

¹¹¹Ibid., 111.

¹¹²Ibid., 109-111; Hyatt, *Currie*, 63-66.

Canadian Corps eventually solved the problem by bringing attacking troops into the front line of trenches several days ahead of an attack; those forces then had sufficient time to rest and familiarize themselves with the terrain. There was risk enemy artillery fire would attrit the waiting troops, or that German forces might observe the buildup and negate surprise; however, Currie found the resulting effectiveness of attacks to be worth the risk.¹¹³

These examples demonstrate Currie's exceptional initiative, his lack of cognitive constraint or blind obedience to the chain of command, his propensity to conduct thorough analysis, and his motivation to learn from mistakes and adapt better practices. Currie was able to adopt best practices from other forces and adapt their ideas to his own situation, as well as independently developing solutions to battlefield problems. Both Byng and Currie were learners and innovators, and under their leadership the corps evolved a culture that valued learning and innovation. "No man would be allowed to get back to Canada and say that he had a good idea or suggestion upon any subject connected with the war and that he could not get it considered by a higher authority," Brigadier General William Griesbach often told his battalion commanders.¹¹⁴ Subordinates were encouraged to propose ideas, and were even encouraged to challenge their superior officers if they had some expertise to share.¹¹⁵

Both Byng and Currie understood that in order to overcome the stalemate of trench warfare, they needed to use enormous weight of artillery to "obliterate the outpost and main battle zone;" followed closely by "the infantry, who would seize the ground, occupy it and defeat any counter-attacks."¹¹⁶ However, the requisite tactics, techniques, and procedures (TTPs) did not

¹¹³Winter, *Haig's Command*, 108; Hyatt, *Currie*, 83; Nicholson, *Official History*, 318-319.

¹¹⁴Griesbach to battalion commanders, 20 May 1918, in National Archives of Canada, RB 9 III C 3, v. 4113, folder 45, file 6. Quoted in Brennan, "Byng's and Currie's Commanders," 8.

¹¹⁵Hyatt, *Currie*, 53; Morton, *Peculiar Kind of Politics*, 120.

¹¹⁶Shane B. Schreiber, *Shock Army of the British Empire: The Canadian Corps in the Last 100*

necessarily exist and so they set the corps the task of figuring out how to make this happen. Soldiers learned how to use German grenades and weapons, thus extending the operational reach of their units in the offensive; as they ran out of their own ammunition they could employ captured enemy weapons and ammunition and stave off culmination.¹¹⁷ Gunners learned how to use German artillery pieces, thus greatly extending the operational reach of an attacking force; teams of gunless gunners could move up behind the assaulting waves of infantry and begin firing captured enemy artillery pieces.¹¹⁸ This in turn meant the attack could continue far past the Canadian Corps' organic artillery range and still be supported by indirect fire. Staffs and commanders at various levels developed or were assigned projects of solving specific tactical problems and developing TTPs to overcome the problems. They looked at questions such as "how to overpower resistance in an area defended by machine guns in depth using covering fire and smoke grenades"¹¹⁹ and "how to consolidate rapidly on the objective so as to withstand German counterattacks."¹²⁰ Other staffs studied captured German documents, gleaned lessons and possible counter-tactics from enemy doctrine and tactics.¹²¹ Sections, platoons, and companies experimented with trench raiding, practicing and learning individual fire and

Days of the Great War (Westport, CT: Praeger, 1997), 11; Tod Strickland, "Creating Combat Leaders in the Canadian Corps: The Experiences of Lieutenant-Colonel Agar Adamson," in *Great War Commands: Historical Perspectives on Canadian Army Leadership, 1914-1918*, ed. Andrew B. Godefroy (Kingston, Canada: Canadian Defence Academy Press, 2010), 220.

¹¹⁷Granatstein, *Canada's Army*, 109.

¹¹⁸Morton, *A Military History*, 144.

¹¹⁹Currie, *Interim Report on the Operations of the Canadian Corps during the Year 1918*, in Currie and Humphries, *Selected Papers*, 239; Hyatt, *Currie*, 111.

¹²⁰David R. O'Keefe, "'A Brutal Soul-Destroying Business:' Brigadier-General F.O.W. Loomis and the Question of 'Impersonal Generalship,'" in *Great War Commands: Historical Perspectives on Canadian Army Leadership, 1914-1918*, ed. Andrew B. Godefroy (Kingston, Canada: Canadian Defence Academy Press, 2010), 97.

¹²¹Currie, *Interim Report on the Operations of the Canadian Corps during the Year 1918*, in Currie and Humphries, *Selected Papers*, 238; Hyatt, *Currie*, 111.

movement, collective attack tactics, and methods of integrating indirect and direct fires with infantry in the attack, consolidation, and withdrawal.¹²² Major General Frederick Oscar Warren Loomis was quick to notice what was valuable to the enemy and then deny them that opportunity. He noticed that the Germans used quiet periods to repair their defensive positions, and so he had his division artillery keep constant harassing fire on the enemy to deny them the ability to repair their fortifications, which in turn improved the conditions for Canadian attack. Upon realizing how valuable the corps found aerial photography, Loomis instituted SOPs amongst his formation to fire their rifles and Lewis guns at enemy aircraft so they could not get close enough to collect valuable intelligence. He even had the Royal Air Force make practice runs at varying heights so his soldiers could learn to gauge aircraft distances and thus target them more accurately.¹²³

By 1918, battalions, brigades, and divisions all ran Tactical Exercises without Troops (TEWTs) and training exercises within their units whenever the corps was not in battle, and conducted After Action Reviews (AARs) to learn from each exercise.¹²⁴ Nor was the learning solely regarding tactics and technologies; Brigadier General William Griesbach focused his exercises to “encourage initiative and adaptability at all levels of command.”¹²⁵ Loomis’ exercises often emphasized integration between artillery and infantry, or speed in decision-making, manoeuvre, creativity, and action during battle.¹²⁶ All levels within the corps encouraged experimentation with technologies, weapons, TTPs, combined arms groupings, and anything else someone could imagine. Even traditional non-military learning such as literacy, trades, and

¹²²Bill Rawling, *Surviving Trench Warfare: Technology and the Canadian Corps, 1914-1918* (Buffalo, NY: University of Toronto Press, 1992), 47.

¹²³O’Keefe, “Brutal Soul-Destroying Business,” 101-104.

¹²⁴Granatstein, *Canada's Army*, 134.

¹²⁵Brennan, “Byng's and Currie's Commanders,” 8.

¹²⁶O’Keefe, “Brutal Soul-Destroying Business,” 97-98, 104.

technical courses were encouraged. 3rd Canadian Division developed an internal education system called the “University of Vimy Ridge” in 1917 where division personnel of various expertise provided education opportunities to soldiers whenever the division was not involved in fighting. Re-named “Khaki University,” the initiative spread to the entire Canadian Corps and CEF elements in Britain. At its height, it formed partnerships with a number of British and Canadian universities and enabled soldiers to earn credits towards degrees. Obviously the effort was not available to all soldiers all of the time, but when soldiers were out of the front lines for training, R&R, or even convalescing from injury they had an access to educational opportunities ranging from basic reading and writing all the way up to university credits.¹²⁷

The Canadian Corps was not the only learning organization in the BEF during the Great War. Historian Peter Simkins notes that there “was a well-defined and more or less continuous tactical learning curve between the Somme and the Armistice, not merely in the Canadian Corps ... but in the BEF as a whole.”¹²⁸ Sir Ivor Maxse, British GOC 18th Division and later GOC XVIII Corps was well known for his innovation and learning. In preparation for an attack on Thiepval (late in the Battle of the Somme) in September 1916, he diligently accumulated and studied lessons learned from previous failed attacks in the area, then planned the assault deliberately, held rehearsals, and encouraged wide dissemination of information. All these actions were similar to those taken by the Canadian Corps in preparation for the Battle of Vimy Ridge; Maxse was doing them seven months prior to the Canadians.¹²⁹ Lieutenant General Sir John Monash, GOC of the Australian Corps implemented a reorganization and training regime of his

¹²⁷Granatstein, *Canada's Army*, 133.

¹²⁸Peter Simkins, “Co-Stars or Supporting Cast? British Divisions in the ‘Hundred Days,’ 1918,” in *British Fighting Methods in the Great War*, ed. Paddy Griffith (London: Frank Cass, 1996), 51, 63. Simkins also refers to research presented in Rawling, *Surviving Trench Warfare*.

¹²⁹Winter, *Haig's Command*, 152-154.

corps prior to and after the battle of Hamel (July 1918) which closely resembled actions taken by the Canadians the previous year.¹³⁰ At the Battle of Cambrai in late 1917, the BEF employed tanks (new technology); attempted to integrate infantry, tanks, and artillery (new combined arms doctrine); and omitted the usual pre-attack artillery bombardment in order to gain complete surprise (learning).¹³¹ However, it would appear that the Canadian Corps was institutionally a stronger learning organization than much of the BEF, and its learning and innovation generally occurred more quickly and more purposefully. The official BEF report after the Battle of the Somme – and Currie’s rejection of the simplistic conclusion and subsequent independent analysis – demonstrates the propensity of the Canadian Corps towards learning in a way that the BEF was not. The staff ride to Verdun offers another excellent example; all the participants encountered the same ideas from the French, yet the Canadian Corps adopted lessons while most of the British formations did not.¹³²

Even ideas that initially developed within the BEF were adopted more extensively in the Canadian Corps. It was the Counter-Battery Staff Officer (CBSO) of BEF V Corps, Lieutenant Colonel Alan Gordon Haig, who introduced the Canadian Corps’ CBSO, Lieutenant Colonel Andrew G.L. McNaughton, to the “most recent developments in sound-ranging, flash-spotting and aerial reconnaissance, and how these were being used to locate the enemy’s guns.”¹³³ McNaughton and the Canadian Corps subsequently developed and implemented those ideas so effectively that at the Battle of Vimy Ridge, 83% of the enemy’s artillery had been located and

¹³⁰Hyatt, *Currie*, 113.

¹³¹Granatstein, *Canada's Army*, 136.

¹³²*Ibid.*, 111.

¹³³Paul Dickson, “Leadership and Innovation: Andrew McNaughton and the Counter-Battery Staff Office,” in *Great War Commands: Historical Perspectives on Canadian Army Leadership, 1914-1918*, ed. Andrew B. Godefroy (Kingston, Canada: Canadian Defence Academy Press, 2010), 154.

entered into the fires plan before the battle started.¹³⁴ By late 1917, the Canadian Corps was firing up to twice the amount of artillery ammunition as a BEF Corps during similar attacks, indicating a significant increase in fire support during the attack.¹³⁵ The Canadian Corps had also integrated cutting edge technology such as oscillographs (recorded sound on film to assist in locating enemy gun batteries), extensive communications systems for artillery control and coordination, and reconnaissance assets such as balloons and aircraft, and close integration of intelligence staff to support target planning.

Many CBSOs in the BEF did not even consider using methods such as flash and sound ranging, meteorological reports, and surveying until the Canadian Corps' success at Vimy Ridge made it obvious that these technologies and tactics could greatly increase the effectiveness of artillery in the attack.¹³⁶ Others declined to learn: the CBSO in VI Corps – exposed to the same ideas as McNaughton – refused to integrate intelligence to assist targeting and essentially returned his batteries to a direct fire role, firing only at what they could physically see.¹³⁷ Even those innovators such as Lieutenant Colonel A.G. Haig –who initially proposed many of the ideas and introduced McNaughton to them – was unable to achieve the same success in V Corps as McNaughton was in the Canadian Corps. By the time the Americans joined the war in 1917, the Canadian Corps' CBSO drills, routines, and effectiveness were so different from the majority of the BEF that the Americans chose to model their CBSO function solely on the Canadian Corps and I Corps (BEF).¹³⁸

¹³⁴ Granatstein, *Canada's Army*, 113.

¹³⁵ Hyatt, *Currie*, 98.

¹³⁶ Dickson, "Leadership and Innovation," 146.

¹³⁷ *Ibid.*, 156.

¹³⁸ *Ibid.*, 151.

Most constraining for the BEF was the slowness of their most senior leadership to understand the type of war they were fighting and for their large institutional army to adapt. In 1918, despite the clear understanding by BEF Army commanders that firepower – particularly mobile firepower – was critical on the battlefield, the ratio of machine guns per soldier in each nation’s fighting divisions is presented in Table 1, in ascending order of density:

Table 1. Machine gun densities in 1918

Army	1 machine gun per	Number of machine guns per division
British	61 soldiers	244
German	33 soldiers	350
American	27 soldiers	963
Canadian	13 soldiers	1,557
French	12 soldiers	972

Source: Allied forces data adapted from Denis Winter, *Haig's Command: A Reassessment*, 148. German data adapted from Hubert C. Johnson, *Breakthrough: Tactics, Technology and the Search for Victory on the Western Front in World War I* (Novato, CA: Presidio Press, 1994), 119; Jonathon M. House, *Combined Arms Warfare in the Twentieth Century* (Lawrence: University Press of Kansas, 2001), 61.

Note: Each nations’ divisions were different in size, thus there is not a linear correlation between the ratio of soldiers per machine gun and the number of machine guns per division. The firepower density is best interpreted from the ratio of machine guns to soldiers rather than the number of guns per division.

The BEF Army commanders were simply unable to sway the Commander-in-Chief, Haig, to accept that more machine guns were required and that the armies would be more effective if they reorganized around crew-served weapons rather than maintain the vast separation between arms espoused by the institution.¹³⁹ British training institutions similarly steadfastly resisted modernization. Even in 1918, the BEF’s training programs for soldiers heading to France was still heavily influenced by garrison drills and tactical drills from the Boer War; it showed little evidence of training adapted from lessons learned in the on-going Great War.¹⁴⁰ Institutionally, the Canadian Corps had an enormous advantage over its sister British corps: it did

¹³⁹Ibid., 148-150.

¹⁴⁰Granatstein, *Canada's Army*, 128; Winter, *Haig's Command*, 145-146.

not have to source all its equipment through the BEF institutional army, nor was it dependent upon BEF training schools in England (with the exception of BEF staff officer training programs). The CEF ran their own schools, which enabled the corps to teach its continually evolving tactics, combined arms integration, use of technology, and further instill the culture of learning and innovation amongst its personnel.¹⁴¹

Organizational culture research indicates that “organizations operating in rapidly changing environments will perform best if they either value flexibility and change [an adaptability culture] or participation and high levels of organizational commitment [an involvement culture].”¹⁴² Thus, the value placed on learning and innovation at all levels within the 1st Canadian Corps assisted them in achieving their high performance in the dynamic environment of the battlefields of World War I. Over the course of 1917, the corps developed “a distinctly Canadian attack doctrine.”

New applications of technology and tactics included the massive HMG barrages and interdiction introduced on a grand scale at Vimy, counter bombardment and sound-ranging techniques, counter-electronic warfare, the introduction of new gases, aerial photography, increased use of wireless, the wide spread use of the grid communications system, and fire and movement at the platoon and company level.¹⁴³

The corps-wide evolution into a learning organization began in earnest in the Canadian Corps’ four month-long preparations for the assault on Vimy Ridge in April 1917 and continued through the end of the war. The corps’ unbroken success from April 1917 until the end of the war not only proved the value of the concepts the Canadian Corps was developing, but perhaps more importantly proved the value of team learning and entrenched the learning culture within the Corps.

¹⁴¹Granatstein, *Canada's Army*, 128.

¹⁴²Mary Jo Hatch and Ann L. Cunliffe, *Organization Theory: Modern, Symbolic, and Postmodern Perspectives* (Oxford, UK: Oxford University Press, 2006), 190. Based upon research conducted by Daniel R. Denison and published in *Corporate Culture and Organized Effectiveness* (New York: 1990).

¹⁴³McCulloch, “A Bonny Fighter and a Born Leader,” 73.

CONCLUSION

Canada's participation in World War I enabled transformation of the nation from a satellite state into an independent nation and ally. It also saw the transformation of the largely amateur and inexperienced CEF into one of the most effective fighting forces in the BEF. These transformations were the result of arrangements of actions, linked in purpose, to achieve the two strategic objectives of independence and creation of an effective fighting force. The actions along the line of effort to achieve independence include the military and governance efforts to support the war, an information campaign to build a sense of nationalism, and Canadianization of the military force. The actions along this line of effort to create an effective fighting force within the CEF were based upon transformation of the organizational culture of the Canadian Corps: the development of a command philosophy that engendered professionalism and pragmatism, and the value placed upon learning and innovation. The success of these lines of effort in enabling transformation can be determined first by examining the success of the 1st Canadian Corps, and subsequently by examining Canada's success in achieving independence.

On the balance, the Canadian Corps' operations at the Canal du Nord [September 1918] were the best exemplar of Canadian military professionalism in the Great War. The GOC had proposed an innovative, complicated plan, his staff had drafted his orders, and his officers and men had carried them out. That sounds simple enough, but, of course, it's not. To combine artillery and infantry, to get specialist units at the right place at the right time, required great skill. Currie, his staff, and his men had mastered the Great War's demands: massive, accurate artillery support, using high explosives, shrapnel, and gas against the enemy trenches; provision of forming up areas, lines of communication, and artillery; and a tough, well-briefed infantry using fire and movement aided by their mortars, machine guns, rifles, and grenades.¹⁴⁴

Given their hasty and chaotic assembly, their poor equipment, inexperienced leadership, and lack of collective training, it is unsurprising that the 1st Canadian Corps' first engagement – the Battle of the St. Eloi Craters in April 1916 – ended in defeat. Yet despite their inauspicious

¹⁴⁴Granatstein, *Canada's Army*, 140-141.

start, the 1st Canadian Corps underwent an extraordinary transformation between 1914 and 1918, emerging by the end of the war as one of the finest fighting corps in the Allied forces.¹⁴⁵ The overall success of the 1st Canadian Corps' transformation can be gauged in a number of ways. Their internal improvement and transformation is evident in a simple comparison of the preparations undertaken by the corps for two of their particularly noteworthy victories: the Battle of Vimy Ridge (April 1917) and penetration of the Drocourt-Quéant Line (September 1918). Direct comparisons of battles are always difficult due to the myriad variables that differ in each situation; for example, the German position in Vimy was probably stronger due to the elevated ground, but the position had significantly more depth at the Drocourt-Quéant Line. However, the essence of this comparison is that both battles were against determined German defenders occupying extensive, fortified defensive positions, and the Canadian Corps was successful in both instances. The Canadian Corps spent four months preparing for the Battle of Vimy Ridge (April 1917); 17 months later they required only four days to prepare for the penetration of the Drocourt-Quéant Line. The difference of an entire order of magnitude in preparation time is indicative of great improvement and transformation within the organization.

Another way of gauging the corps' success is by looking at the perceptions held by other forces on the battlefield. Historian Peter Simkins conducted a statistical analysis of the success rate of all divisions within the BEF; his "findings confirmed that the success rate of the Dominion divisions was indeed remarkably high."¹⁴⁶ He found that Dominion divisions were more successful than 80% of the British divisions. His findings also imply that Dominion divisions

¹⁴⁵Denis Winter, *Haig's Command*, 131; Schreiber, *Shock Army*, 1-3.

¹⁴⁶Simkins, "Co-Stars or Supporting Cast," 53.

were employed more often against dedicated, entrenched German defenders.¹⁴⁷ Haig biographer Dennis Winter found that:

Whenever Haig planned a breakthrough or came upon a particularly obdurate German position, British units were pushed aside and Dominion troops put in charge. ... 1917 meant Vimy (Canadians), Bullecourt (Australians) and the capture of Passchendaele (Canadians and Australians). 1918 included 8 August (Canadians and Australians) [The Battle of Amiens and the opening of the Hundred Days Offensive which would end the war] and the breaking of the Hindenburg Line (Australians and Canadians) at the two strongest points.¹⁴⁸

The Germans also learned that the presence of Australian or Canadian troops heralded an attack they were unlikely to withstand, and in preparation for the Battle of Amiens (August 1918), “great logistic and deception efforts were made to ensure the surprise concentration of both the Australian and Canadian corps at the spearhead of the attack.”¹⁴⁹

Canada’s political landscape today retains much of the fracture Borden recognized between the French and English parts of the nation; the establishment of a Canadian distinct Canadian identity did not overcome that divide. In other respects; however, Borden’s efforts were ultimately successful in moving Canada towards autonomy. Canada may not have had a say in entering the Great War, but it was a signatory to the Treaty of Versailles, which ended the war in June 1919. Canada subsequently joined the League of Nations as its own nation, rather than a dominion of Britain. The path towards Canada’s total independence, however, was not yet complete. The Statute of Westminster, passed by British parliament in 1931, transferred the right of self-governance and foreign policy determination to its dominions and transformed the British

¹⁴⁷Ibid., 53-58. Simkins finds that 11% of British divisions’ battles were against retreating German forces, compared to only 3% for Dominion divisions’ battles. His analysis is unable to account for all the possible variables of a given situation; for example, the number of battles a division had fought previously, their combat effective strength and level of exhaustion going into a given battle, weather and terrain conditions the day of the battle, or strengths of German fortifications. Therefore, the statistical analysis findings cannot be taken as immutable fact, but they most certainly provides useful comparisons.

¹⁴⁸Winter, *Haig's Command*, 144.

¹⁴⁹Paddy Griffith, *Battle Tactics of the Western Front: The British Army's Art of Attack 1916-18* (New Haven, CT: Yale University Press, 1994), 83.

Empire into the British Commonwealth. Although legislative and legal crossovers and entanglements between the Statute of Westminster and the various British North America Acts would not be fully resolved until the Canadian parliament's Constitution Act of 1982, Canada made its own foreign policy from 1931 on. The effectiveness and success of the 1st Canadian Corps, along with their sense of identity as distinctly Canadian, provided Borden with much of the political leverage he required to achieve his strategic goal of establishing Canadian national identity and achieving true independence from Britain.

APPENDIX 1 – KEY PERSONNEL

- Alderson: Lieutenant-General Edwin Alderson
GOC 1st Canadian Division 1914 – September 1915
GOC 1st Canadian Corps September 1915 – June 1916
- Borden: Sir Frederick Borden
Minister of the Department of Militia and Defence 1896 – 1911
- Borden: Sir Robert Laird Borden
Prime Minister of Canada 1911 – 1920
- Byng: Lieutenant-General the Honorable Sir Julian Byng
GOC 1st Canadian Corps June 1916 – June 1917
GOC Third Army June 1917 – 1918
- Currie: Lieutenant-General Sir Arthur Currie
Commander 2nd Brigade 1914 – September 1916
GOC 1st Canadian Division September 1916 – June 1917
GOC 1st Canadian Corps June 1917 – 1918
- George: Lloyd George
Prime Minister of the United Kingdom 1916 – 1922
- Gough: General Sir Hubert de la Poer Gough
GOC Second Army (BEF) 1916 – 1918
- Griesbach: Brigadier-General William Griesbach
Commander 49th Battalion (Edmonton Regiment) 1915 – 1917
Commander 1st Infantry Brigade 1917 – 1918
- Haig: Field Marshal Sir Douglas Haig
Commander-in-Chief of the British Expeditionary Force 1915 – 1918
- Haig: Lieutenant-Colonel Alan Gordon Haig
Counter-Battery Staff Officer V Corps (BEF)
- Hughes: Sir Sam Hughes
Minister of the Department of Militia and Defence 1911 – November 1916
- Kemp: Albert Edward Kemp
Minister of the Department of Militia and Defence 1916 – 1917
Minister of the Overseas Military Forces of Canada 1917 – 1920
- Loomis: Major-General Frederick Oscar Warren Loomis
Commander 13th Battalion (Royal Highlanders of Canada) 1914 - 1916
Commander 2nd Brigade 1916 – September 1918
GOC 3rd Canadian Division September – November 1918

Monash: Lieutenant-General Sir John Monash
GOC Australian Corps May – November 1918

McNaughton: Lieutenant-Colonel Andrew G.L. McNaughton
Counter-Battery Staff Officer 1st Canadian Corps 1917 – 1918

Perley: Sir George Perley
Canadian High Commissioner to the United Kingdom 1914 – 1922
Minister of the Overseas Military Forces of Canada November 1916 – October 1917

Plumer: General Sir Herbert Plumer
GOC Fifth Army (BEF) 1915 – 1918

Turner: Major-General R.E.W. Turner
Commander 3rd Brigade 1914 – August 1915
GOC 2nd Canadian Division August 1915 – November 1916
Commander for Canadian Forces in Britain, November 1916 - 1918

APPENDIX 2 – TIMELINE

1867: initial British North America Act, grants Canada domestic self-governance

1899 – 1902: Second Boer War

10 October 1911: Borden becomes Prime Minister of Canada; Hughes becomes Minister of the Department of Militia and Defence

1914

4 August 1914: United Kingdom declares war on Germany (Canada automatically at war)
October 1914: 1st Canadian Division deploys to Britain

1915

February 1915: 1st Canadian Division deploys to France
September 1915: 2nd Canadian Division deploys to France
September 1915: 1st Canadian Corps stands up under command of Alderson
November 1915: Imperial Munitions Board stood up in Canada to bring war-related industries under control with respect to quality and effectiveness of production
December 1915: First iteration of formalized OJT staff training and staff school in Hesdin, France

1916

3-16 April 1916: Battle of St Eloi Craters
June 1916: 3rd Canadian Division joins the 1st Canadian Corps in France
June 1916: command of the 1st Canadian Corps passes from Alderson to Byng
July – November 1916: Battle of the Somme
26-28 September: Battle of Thiepval Ridge. In preparation for this battle, Sir Ivor Maxse, GOC 18th Division (BEF), used many of the learning organization behaviors (studying lessons learned, rehearsing) which the 1st Canadian Corps would embrace later that year
October 1916: 4th Canadian Division joins the 1st Canadian Corps in France
October – November 1916: battle for Regina Trench, which Currie later studied and learned from
November 1916: Hughes replaced by Kemp as Minister of the Department of Militia and Defence; Ministry of the Overseas Military Forces of Canada stands up under leadership of Perley

1917

1917 – 1918 women granted right to vote in Canadian federal elections
2 March 1917: first meeting of the Imperial War Cabinet
9-12 April 1917: Battle of Vimy Ridge
April – May 1917: Battle of Bullecourt, the Australian Corps faced determined German elastic defense along the southern axis of the Arras advance (the Canadian Corps' assault on Vimy Ridge occurred along the northern axis of the same offensive).
summer 1917: Second iteration of formalized OJT staff training
June 1917: command of the 1st Canadian Corps passes from Byng to Currie
31 July – mid-November 1917: Battle of Passchendaele; 1st Canadian Corps' assault commenced 26 October and successfully seized Passchendaele. The battle is controversial due to high casualty rates across the BEF (including Canadians and

Australians) and debatable strategic value of the territory gained
29 August 1917: Military Service Act enacted conscription
December 1917: Khaki University formalized by CEF

1918

March – April 1918: Ludendorff Offensive (German offensive along Western Front)
4 July 1918: Battle of Hamel; the Australian Corps seized Hamel in less than a day,
illustrating successful organizational learning and innovation
8 – 11 August 1918: Battle of Amiens; British attack, spearheaded by the Canadian Corps
and the Australian Corps, breaks through German line
8 August – 11 November 1918: Hundred Days Offensive
26 August – 2 September 1918: Canadian assault penetrates Drocourt-Quéant Line
21 September – 9 October 1918: Canadian assault crosses Canal du Nord and seizes
Cambrai
11 November 1918: Armistice

28 June 1919: Treaty of Versailles ends the Great War

11 December 1931: Statute of Westminster gives full independence to the Dominions of the
British Empire; marks the transition from British Empire to voluntary Commonwealth
membership.

BIBLIOGRAPHY

- ADP 3-0 Unified Land Operations*. Doctrine 2015, edited by Headquarters, Department of the Army. Washington, DC: Department of the Army, 2011.
- ADP 6-0 Mission Command*. Doctrine 2015, edited by Headquarters, Department of the Army. Washington, DC: Department of the Army, 2012.
- ADRP 5-0 The Operations Process*. Doctrine 2015, edited by Headquarters, Department of the Army. Washington, DC: Department of the Army, 2012.
- ADRP 6-22 Army Leadership*. Doctrine 2015, edited by Headquarters, Department of the Army. Washington, DC: Department of the Army, 2012.
- B-GJ-005-000/FP-001 CFJP 01 Canadian Military Doctrine*, edited by Joint Doctrine Branch, Canadian Forces Experimentation Centre. Ottawa, Canada: Department of National Defence, 2011.
- Bailey, Jonathan. *The First World War and the Birth of the Modern Style of Warfare*. Camberley, UK: Strategic and Combat Studies Institute, 1996.
- Berton, Pierre. *Vimy*. Markham, Canada: Penguin Books, 1987.
- Black, Jeremy. "The Revolution in Military Affairs: The Historian's Perspective." *Journal of Military and Strategic Studies* 9, no. 2 (2007).
- Brennan, Patrick H. "Byng's and Currie's Commanders: A Still Untold Story of the Canadian Corps." *Canadian Military History* 11, no. 2 (2002): 5-16.
- Brown, Ian M. "Not Glamorous, but Effective: The Canadian Corps and the Set-Piece Attack, 1917-1918." *The Journal of Military History* 58, no. 3 (1994): 421-444.
- Canadian War Museum. "Canada and the First World War." Canadian Museum of Civilization Corporation, accessed 6 November 2013, <http://www.warmuseum.ca/cwm/exhibitions/ guerre/canada-at-war-e.aspx>.
- Clausewitz, Carl von, Michael Eliot Howard, and Peter Paret. *On War*. Princeton, NJ: Princeton University Press, 2008.
- Cook, George. "Sir Robert Borden, Lloyd George and British Military Policy, 1917-1918." *The Historical Journal* 14, no. 2 (1971): 371-395.
- Cook, Tim. "Documenting War and Forging Reputations: Sir Max Aitken and the Canadian War Records Office in the First World War." *War in History* 10, no. 3 (2003).
- . "The Madman and the Butcher: Sir Sam Hughes, Sir Arthur Currie, and their War of Reputations." *Canadian Historical Review* 85, no. 4 (12, 2004): 693-719.

- . “‘Our First Duty is to Win, at Any Cost:’ Sir Robert Borden during the Great War.” *Journal of Military and Strategic Studies* 13, no. 3 (2011).
- Copp, Terry. “The 2008 Ross Ellis Memorial Lecture in Military and Strategic Studies: Canada's National Army, Canada's National Interest 1918.” *Journal of Military and Strategic Studies* 10, no. 3 (2008).
- Currie, Sir Arthur and Mark Osborne Humphries. *The Selected Papers of Sir Arthur Currie: Diaries, Letters, and Report to the Ministry, 1917-1933*. Waterloo, Canada: Wilfrid Laurier University Press, 2008.
- Delaney, Douglas E. “Mentoring the Canadian Corps: Imperial Officers and the Canadian Expeditionary Force, 1914–1918.” *The Journal of Military History* 77, no. 3 (2013): 931-953.
- Dickson, Paul. “Leadership and Innovation: Andrew McNaughton and the Counter-Battery Staff Office.” In *Great War Commands: Historical Perspectives on Canadian Army Leadership, 1914-1918*, edited by Andrew B. Godefroy. Kingston, Canada: Canadian Defence Academy Press, 2010.
- Dörner, Dietrich. *The Logic of Failure: Why Things Go Wrong and What We Can Do to Make Them Right*. New York: Metropolitan Books, 1996.
- Gharajedaghi, Jamshid. *Systems Thinking: Managing Chaos and Complexity: A Platform for Designing Business Architecture*. Amsterdam, Netherlands: Elsevier, 2006.
- Goldsworthy, Ryan. “Measuring the Success of Canada’s Wars: The Hundred Days Offensive as a Case Study.” *Canadian Military Journal* 13, no. 2, (Spring 2013).
- Granatstein, J. L. *Canada's Army: Waging War and Keeping the Peace*. Buffalo, NY: University of Toronto Press, 2002.
- Griffith, Paddy. *Battle Tactics of the Western Front: The British Army's Art of Attack 1916-18*. New Haven, CT: Yale University Press, 1994.
- Grodzinski, John R., Major. “The Use and Abuse of Battle: Vimy Ridge and the Great War Over the History of the First World War.” *Canadian Military Journal* 10, no. 1 (2009): 83-86.
- Haig, Douglas, G. D. Sheffield, and J. M. Bourne. *Douglas Haig: War Diaries and Letters, 1914-1918*. London: Weidenfeld & Nicolson, 2005.
- Harris, Stephen J. *Canadian Brass: The Making of a Professional Army 1860-1939*. Toronto, Canada: University of Toronto Press, 1988.
- Hatch, Mary Jo and Ann L. Cunliffe. *Organization Theory: Modern, Symbolic, and Postmodern Perspectives*. Oxford, UK: Oxford University Press, 2006.

- Haynes, Alex, Major. "The Development of Infantry Doctrine in the Canadian Expeditionary Force: 1914-1918." *Canadian Military Journal* Autumn, (2007): 63 - 72.
- Hyatt, A. M. J. *General Sir Arthur Currie: A Military Biography*. Toronto: University of Toronto Press, 1987.
- House, Jonathan M. *Combined Arms Warfare in the Twentieth Century*. Lawrence: University Press of Kansas, 2001.
- Johnson, Hubert C. *Breakthrough: Tactics, Technology, and the Search for Victory on the Western Front in World War I*. Novato, CA: Presidio Press, 1994.
- Jones, Spencer. *From Boer War to World War: Tactical Reform of the British Army, 1902-1914*. Norman: University of Oklahoma Press, 2012.
- Kerry, Armine John and W. A. McDill. *The History of the Corps of Royal Canadian Engineers: Volume 1 1749-1939*. Toronto: Thorn Press, 1962.
- Knox, MacGregor and Williamson Murray. *The Dynamics of Military Revolution, 1300-2050*. Cambridge, UK: Cambridge University Press, 2001.
- Lawson, Bryan. *How Designers Think: The Design Process Demystified*. Oxford, UK: Elsevier/Architectural, 2006.
- Library and Archives Canada. "Towards Confederation." Library and Archives Canada, accessed 6 November 2013, <http://www.collectionscanada.gc.ca/confederation/023001-2700-e.html>.
- . "Towards Confederation: Provinces and Territories." Library and Archives Canada, accessed 6 November 2013, <http://www.collectionscanada.gc.ca/confederation/023001-3000-e.html>.
- Maloney, Sean M. "The Canadian Tao of Conflict." In *Forging a Nation: Perspectives on the Canadian Military Experience*, edited by Bernd Horn. St Catherines, Canada: Vanwell, 2002.
- Marteinson, John. *We Stand on Guard: An Illustrated History of the Canadian Army*. Montreal, Canada: Ovale Publication, 1992.
- Martin, Jean. "Vimy, April 1917: The Birth of Which Nation?" *Canadian Military Journal* 11, no. 2 (2011): 32-38.
- McCulloch, Ian Macpherson. "'A Bonny Fighter and a Born Leader:' A Portrait of Sir Archibald Cameron Macdonell, KCB, CMG, DSO." In *Great War Commands: Historical Perspectives on Canadian Army Leadership, 1914-1918*, edited by Andrew B. Godefroy. Kingston, Canada: Canadian Defence Academy Press, 2010.

- McWilliams, James L. and R. James Steele. *The Suicide Battalion*. St Catherines, Canada: Vanwell Publishing, 1990.
- Miller, Carman. *A Knight in Politics: A Biography of Sir Frederick Borden*. Montreal, Canada: McGill-Queen's University Press, 2010.
- Morton, Desmond. *A Military History of Canada*. Edmonton, Canada: Hurtig Publishers, 1990.
- . *A Peculiar Kind of Politics: Canada's Overseas Ministry in the First World War*. Buffalo, NY: University of Toronto Press, 1982.
- Neiberg, Michael S. "The Evolution of Strategic Thinking in World War I: A Case Study of the Second Battle of the Marne." *Journal of Military and Strategic Studies* 13, no. 4 (2011).
- . "A Middle Power on the World Stage: Canadian Grand Strategy in the Twentieth Century." *Journal of Military and Strategic Studies* 14, no. 2 (2012).
- Neilson, Keith. "Canada and British War Finance." In *Forging a Nation: Perspectives on the Canadian Military Experience*, edited by Bernd Horn. St Catherines, Canada: Vanwell, 2002.
- Nicholson, G. W. L. *Official History of the Canadian Army in the First World War: Canadian Expeditionary Force 1914-1919*. Ottawa, Canada: Roger Duhamel, F.R.S.C., 1964.
- O'Keefe, David R. "'A Brutal Soul-Destroying Business:' Brigadier-General F.O.W. Loomis and the Question of 'Impersonal Generalship.'" In *Great War Commands: Historical Perspectives on Canadian Army Leadership, 1914-1918*, edited by Andrew B. Godefroy. Kingston, Canada: Canadian Defence Academy Press, 2010.
- Pratt, David. "Is There a Grand Strategy in Canadian Foreign Policy? Ross Ellis Memorial Lectures in Military and Strategic Studies." *Journal of Military and Strategic Studies* 10, no. 2 (2008).
- Rawling, Bill. *Surviving Trench Warfare: Technology and the Canadian Corps, 1914-1918*. Buffalo, NY: University of Toronto Press, 1992.
- Robbins, Simon. *British Generalship on the Western Front 1914-1918: Defeat into Victory*. New York: Frank Cass, 2005.
- Schreiber, Shane B. *Shock Army of the British Empire: The Canadian Corps in the Last 100 Days of the Great War*. Westport, CT: Praeger, 1997.
- Senge, Peter M. *The Fifth Discipline: The Art and Practice of the Learning Organization*. New York: Doubleday/Currency, 2006.

Simkins, Peter. "Co-Stars or Supporting Cast? British Divisions in the 'Hundred Days,' 1918." In *British Fighting Methods in the Great War*, edited by Paddy Griffith. London: Frank Cass, 1996.

Statistics Canada. "Canada Year Book 1914." Statistics Canada, accessed 6 November 2013, http://www66.statcan.gc.ca/eng/acyb_c1914-eng.aspx?opt=%2feng%2f1914%2f191400190000_Statistical+Summary+of+the+Progress+of+Canada.pdf.

———. "Canadian Statistics in 1914." Statistics Canada, accessed 6 November 2013, http://www65.statcan.gc.ca/acyb07/acyb07_0007-eng.htm.

Strickland, Tod. "Creating Combat Leaders in the Canadian Corps: The Experiences of Lieutenant-Colonel Agar Adamson." In *Great War Commands: Historical Perspectives on Canadian Army Leadership, 1914-1918*, edited by Andrew B. Godefroy. Kingston, Canada: Canadian Defence Academy Press, 2010.

Travers, Timothy H. E. "Allies in Conflict: The British and Canadian Official Historians and the Real Story of Second Ypres." *Journal of Contemporary History* 24, no. 2 (1989): 301-325.

Weir, Erin. "Using the Legacy of World War I to Evaluate Canadian Military Leadership in World War II." *Journal of Military and Strategic Studies* 7, no. 1 (2004).

Winter, Denis. *Haig's Command: A Reassessment*. London: Viking, 1991.